I. *An Account of ſome new Experiments, relating to the different, and ſometimes contrary Motion of the Sap in Plants and Trees, made by* Thomas Fairchild, Gardener *at* Hoxton.

I HAD the Honour, ſome Years ago, to ſhew ſome Experiments before the *Royal Society*, and they were pleaſed to allow the Experiments to be new and uſeful; which encouraged me to try further, and bring more Experiments, in order to ſhew the Courſe of the Sap; which I find, by Experience, will be ſo uſeful, that I can make barren Trees fruitful, and decaying Trees healthful, and render the Syſtem of Gardening and Planting more uſeful to the Publick.

The firſt Plant I ſhewed was the *Laureola*, grafted upon the *Mezereon*, and the *Evergreen Oak* of *Virginia* upon the common *Engliſh Oak*; both which hold their Leaves all the Winter, and are in good State and flouriſhing, though grafted on Plants that drop their Leaves in Winter; which plainly proves that the Juices riſe upwards, in Winter, in thoſe Plants that drop their Leaves, otherwiſe the *Evergreens* that are grafted on them would ſoon periſh.

I believe by grafting the Variety of foreign Oaks on the *Engliſh*, we might make the Timber more firm and laſting, than it is in its own Nature, when raiſed from foreign Acorns: For as the Crab-Stock maketh the Wood of the Apple-Tree more firm and laſting than that on the Apple-Stock, and the Peaches and Almonds, budded on Plums, are more laſting than thoſe on Peach-Stocks; ſo by the contrary Rule, all firm Timber,

grafted on ſpungy Stocks, would be made worſe than it would be on its own Bottom. For Example, If that which is called the *Engliſh Elm*, ſhould be grafted on that which is called the *Dutch*, it would partake of abundance of the ſpungy Juices of the Stock, whereby the Timber would become unfit for the Purpoſes it is now uſed for.

The firſt Experiment, I have to offer to your Obſervation at preſent, is made on the *New England Cedar*, or rather *Juniper*, grafted on the *Virginia*; and what is remarkable in it, is, That the Branch, which is grafted, is left ſeveral Inches below the Grafting, which Part continues growing as well as the upper Part above the Grafting.

The ſecond Plant is the *Viburnum*, with the Top planted in the Ground, which is become Roots; and the Roots turned up, which are become Branches. But whether the ſame Veſſels, which fed the Branches, have changed their Courſe, or whether the Juices go up and down in the ſame Veſſels, I ſhall leave to better Judgments; but I find the Plant in as good State of growing, as it was in its natural State.

The third Experiment is made on a Pear-Tree, which I enarched upon two Pear-Stocks, in *March* 1721-2. which is now in a good flouriſhing State, with a Branch in Bloſſom, and receiveth no Nouriſhment but by the two enarched Branches, the Root being out of the Ground; and tho' it was done above two Years ago, it is now ſhooting Suckers out of the Root, which proveth that the Branches are as uſeful to ſupport the Roots, as the Roots the Branches; and it is therefore no Wonder that ſo many Trees miſcarry in Planting, when there are no Branches left on the Head.

The fourth Experiment is made on the Cedar of *Libanus*, grafted on the *Laryx*, which drops its Leaves in the Winter; yet maintains the Cedar in as flouriſhing Condition, as if it had been on a Tree that held the Leaves all the Winter; and the Part of the Graft, left below the Grafting, is in as good Health as the Part above the Grafting.

II. *An Account of an extraordinary Cure by Sweating in Hot Turff; with a Deſcription of the* Indian Hot-Houſes; *by the Honourable* Paul Dudley, *Eſq*; F. R. S.

IN the Year 1704. *Peter Coffin*, Eſq; of *Exeter* in *New England*, being then ſeventy four Years of Age, had taken a great Surfeit, as 'twas thought, by drinking cold Water, in a very hot Day, and when he had heated himſelf in the Woods. This Surfeit ſettled principally in his right Side, but gave him a racking Pain all over his Body, and particularly depriv'd him of the Uſe of his right Arm: In this Condition he kept his Houſe and Bed for nine Weeks, and his Recovery, conſidering his Age, was deſpaired of; when a Son of his, from whom I had the Relation, making a Viſit to his Father, propoſed the Sweating of him in Turff: The Father readily agreed to it, having uſed many Medicines, from other Phyſicians, without any Effect. Immediately Orders were given to cut a large Oven full of Turff; the Pieces might be to eighteen Inches ſquare. The Turff it ſelf was of *Engliſh* Graſs, and only the Swerd, or Top of the Earth, with the Graſs. Before the Turff was put into the Oven, the Doctor rubb'd